



## RAFFINOSE SYNTHASE GENES AND THEIR USE

### BACKGROUND OF THE INVENTION

#### FIELD OF INVENTION

The present invention relates to raffinose synthase genes and their use.

#### DISCLOSURE OF THE RELATED ART

Raffinose family oligosaccharides are derivatives of sucrose, which are represented by the general formula:  $\text{o-}\alpha\text{-D-galactopyranosyl-(1}\rightarrow\text{6)}_n\text{-o-}\alpha\text{-D-glucopyranosyl-(1}\rightarrow\text{2)-}\beta\text{-D-fluctofuranoside}$ , and they are called "raffinose" when  $n$  is 1, "stachyose" when  $n$  is 2, "verbascose" when  $n$  is 3, and "ajugose" when  $n$  is 4.

It has been known that raffinose family oligosaccharides have an effect of giving good conditions of enterobacterial flora, if present at an appropriate amount in food. Therefore, raffinose family oligosaccharides have already been used as a functional food material for addition to some kinds of food and utilized in the field of specific health food. On the other hand, raffinose family oligosaccharides are neither digested nor absorbed in mammals such as human, but are assimilated and decomposed by enterobacteria to generate gases and to cause meteorism and absorption disorder. Therefore, it has been desired to appropriately regulate the amount of raffinose family oligosaccharides in food and feed.

Raffinose family oligosaccharides are synthesized

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